



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,701	09/12/2003	Charles W. Dunmire	87225.1819	7675

7590 08/03/2004

Baker & Hostetler LLP
Washington Square, Suite 1100
1050 Connecticut Avenue, N.W.
Washington, DC 20036

EXAMINER

RIVELL, JOHN A

ART UNIT PAPER NUMBER

3753

DATE MAILED: 08/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/660,701

Applicant(s)

DUNMIRE ET AL.

Examiner

John Rivell

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/21/04 (amendment).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 3753

Applicant's arguments with respect to claims 10-23, filed May 21, 2004 have been considered but are moot in view of the new ground(s) of rejection.

Claims 1-9 have been canceled. Claims 10-23 remain pending.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 10, 11, 12, 15 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griswold (UK '533) in view of Morgan or Van Nest.

In the document to Griswold (UK '553), claim 11, as dependent on claim 9/4/etc., recites an embodiment of the invention in which the embodiment of check valve shown in figure 2 is duplicated and connected in serial fluid communication such that the outlet of a first valve is connected to the inlet of the second valve.

As such, the embodiment of the invention envisioned by claim 11/9/4/etc of Griswold (UK '553) is read as "a backflow preventor apparatus for connection to parallel, oppositely-flowing inlet and outlet conduits (the "inlet conduit" feeding the first valve and would be threaded at 26a and an "outlet conduit" leading from the outlet 27a of the second valve), comprising: a first housing (surrounding the first valve) having a first valve (10) having a valve body and connected to the inlet conduit via a first flange

(threaded flange 26a), said first valve mounted in said first housing so that it is positioned generally parallel to the inlet conduit, said first valve movable between an opened position and a closed position,... and a second housing (surrounding the second valve) connected to said first housing and the fluid outlet via a second flange (at threaded flange 27a of the second valve), having a second valve (10) having a valve body positioned at an angle approximately 90 degrees to the inlet (conduit), said second valve movable between an opened position and a closed position,... wherein the flow of fluid has an average streamline path between the inlet conduit and the outlet conduit, wherein the sum of changes in flow direction of said average streamline path is approximately 180 degrees" as recited in claim 10.

Thus Griswold (UK '533) discloses all the claimed features with the exception of having the "first valve (comprise) a first disc-shaped clapper pivotally connected to the valve body via a first pivot arm" and the "second valve (comprise) a second disc-shaped clapper pivotally connected to the valve body via a second pivot arm".

The patents to either of Morgan or Van Nest each disclose that it is known in the art to employ a valve body in which is mounted a pivotal "disc shaped clapper" valve element (14 in Morgan, valve plate 39 in Van Nest) in which the valve body includes outlets (12 in Morgan, 32 in Van Nest) located perpendicular or at 90° relative to the inlet (11 in Morgan, 31 in Van Nest), with each valve head "pivotally connected to the valve body via a (respective "first" or "second" pivot arm" for the purpose of providing a check valve in a fluid conduit permitting one way flow only in a perpendicularly arranged conduit connection to accommodate peculiar plumbing requirements.

Additionally, the changes here merely reflect art recognized equivalents in that each of the devices of Griswold (UK '533) and Morgan or Van Nest are check valve devices permitting only one way flow through a conduit.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Griswold (UK '533) a pivotal "disc shaped clapper" valve head mounted on a respective "first" and/or "second pivot arm" for the purpose of providing a check valve in a fluid conduit permitting one way flow only in a perpendicularly arranged conduit connection to accommodate peculiar plumbing requirements as recognized by Morgan or Van Nest.

Regarding claim 11, in the embodiment of claim 11/9/4/etc. of Griswold (UK '553) "said first valve and said second valve are positioned at 90 degree angle to one another" as recited because the inlet 26a of the second valve in series is connected to the outlet 27a of the first valve in the series.

Regarding claim 13, the embodiment of claim 11/9/4/etc. of Griswold (UK '553) discloses "a backflow preventor apparatus for connection to parallel, oppositely-flowing inlet and outlet conduits (the "inlet conduit" feeding the first valve and would be threaded at 26a and an "outlet conduit" leading from the outlet 27a of the second valve), comprising: a first housing (surrounding the first valve) having a first valve (10) and connected to the inlet conduit via a first flange (threaded flange 26a), said first valve mounted in said first housing so that it is positioned generally parallel to the inlet conduit, said first valve movable between an opened position and a closed position; and a second housing (surrounding the second valve) connected to said first housing and the fluid outlet via a second flange (threaded flange 27a of the second valve), having a second valve (10) positioned at an angle approximately 90 degrees to the inlet (conduit), said second valve movable between an opened position and a closed position; and a conduit (connecting the threaded outlet flange 27a of the first valve to the threaded inlet flange 26a of the second valve), extending between and coupled to said first housing and said second housing, wherein the flow of fluid has an average

streamline path between the inlet conduit and the outlet conduit, wherein the sum of changes in flow direction of said average streamline path is approximately 180 degrees" as recited.

Thus Griswold (UK '533) discloses all the claimed features with the exception of having the "first valve (comprise) a first disc-shaped clapper pivotally connected to the valve body via a first pivot arm" and the "second valve (comprise) a second disc-shaped clapper pivotally connected to the valve body via a second pivot arm".

The patents to either of Morgan or Van Nest each disclose that it is known in the art to employ a valve body in which is mounted a pivotal "disc shaped clapper" valve element (14 in Morgan, valve plate 39 in Van Nest) in which the valve body includes outlets (12 in Morgan, 32 in Van Nest) located perpendicular or at 90° relative to the inlet (11 in Morgan, 31 in Van Nest), with each valve head "pivotally connected to the valve body via a (respective "first" or "second" pivot arm" for the purpose of providing a check valve in a fluid conduit permitting one way flow only in a perpendicularly arranged conduit connection to accommodate peculiar plumbing requirements.

Additionally, the changes here merely reflect art recognized equivalents in that each of the devices of Griswold (UK '533) and Morgan or Van Nest are check valve devices permitting only one way flow through a conduit.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Griswold (UK '533) a pivotal "disc shaped clapper" valve head mounted on a respective "first" and/or "second pivot arm" for the purpose of providing a check valve in a fluid conduit permitting one way flow only in a perpendicularly arranged conduit connection to accommodate peculiar plumbing requirements as recognized by Morgan or Van Nest.

Regarding claim 15, in the embodiment of claim 11/9/4/etc. of Griswold (UK '553) "said first valve and said second valve are positioned at 90 degree angle to one another" as recited.

Regarding claim 23, the embodiment of claim 11/9/4/etc. of Griswold (UK '553) discloses "a backflow preventor apparatus for connection to parallel, oppositely-flowing inlet and outlet conduits (the "inlet conduit" feeding the first valve and would be threaded at 26a and an "outlet conduit" leading from the outlet 27a of the second valve) each having longitudinal axes, comprising: a housing (read as the entirety of the "housing" of the first valve and the second valve and any connecting conduit connecting the outlet 27a of the first valve to the inlet 26a of the second valve" configured to accommodate first and second valves, and to receive fluid flow from said inlet conduit (connected at flange 26a of the first valve), a first valve (10) mounted in said housing having a seatable valve disc (at 13, 20) having an edge, moveable between a closed configuration preventing flow and an open configuration permitting flow through a first inlet port (26a of the first valve) in a first direction, said first valve mounted to extend generally parallel to the longitudinal axis of the inlet conduit; and a second valve (second valve 10) mounted in said housing having a seatable valve disc (second valve 10 valve head at 13, 20) having an edge, movable between a closed configuration preventing flow and an open configuration permitting flow through a second inlet port (inlet port 26a of the second valve connected in series) in a second direction, said second valve mounted at angle approximately 90 degrees to the longitudinal axis of the outlet conduit, said axis of mounting of said second valve being substantially perpendicular to said axis of mounting of said first valve; said fluid flow having an average streamline path between said inlet and said outlet conduit, wherein the sum of changes in flow direction of said average streamline path is not substantially greater

Art Unit: 3753

than about 180 degrees, further comprising a first flange for coupling to said inlet conduit and a second flange for coupling to said outlet conduit" as recited.

Thus Griswold (UK '533) discloses all the claimed features with the exception of having the "first valve pivotally mounted" and the "second valve pivotally mounted".

The patents to either of Morgan or Van Nest each disclose that it is known in the art to employ a valve body in which is mounted a pivotal "disc shaped clapper" valve element (14 in Morgan, valve plate 39 in Van Nest) in which the valve body includes outlets (12 in Morgan, 32 in Van Nest) located perpendicular or at 90° relative to the inlet (11 in Morgan, 31 in Van Nest), with each valve head "pivotally connected to the valve body via a (respective "first" or "second" pivot arm" for the purpose of providing a check valve in a fluid conduit permitting one way flow only in a perpendicularly arranged conduit connection to accommodate peculiar plumbing requirements.

Additionally, the changes here merely reflect art recognized equivalents in that each of the devices of Griswold (UK '533) and Morgan or Van Nest are check valve devices permitting only one way flow through a conduit.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Griswold (UK '533) a pivotal "disc shaped clapper" valve head mounted on a respective "first" and/or "second pivot arm" for the purpose of providing a check valve in a fluid conduit permitting one way flow only in a perpendicularly arranged conduit connection to accommodate peculiar plumbing requirements as recognized by Morgan or Van Nest.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Griswold (UK '553) in view of Morgan or Van Nest, as applied to claims 10, 11, 13, 15 and 23 above, further in view of Griswold et al. (US 3,173,439).

The Document to Griswold (UK '553), as modified by Morgan or Van Nest, the embodiment as recited in claims 11/9/4/etc. therein discloses all the claimed features with the exception of having "flanges (that) include holes for accommodating bolts for coupling to the inlet and outlet conduits" at threaded flanges 26a, 27a.

The patent to Griswold et al. (US '439) discloses that it is known in the art to employ bolt circle type flange elements connecting a first backflow preventor valve 1 to a second backflow preventor valve 2 at bolts 3 for the purpose of permitting removal of either of the valve elements 1 or 2 from the pipe line without disturbing the remainder of the pipe line (further considering the inlet bolt circle type flange coupling at bolts 5 connecting an inlet conduit to the first valve 1 and the outlet bolt circle type coupling at bolts 9 connecting the outlet of the second valve 2 to the outlet conduit).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Griswold (UK '553), as modified by Morgan or Van Nest, bolt circle type couplings connecting the first and second backflow preventor check valves, in place of the threaded couplings at 26a, 27a, for the purpose of permitting removal of either of the first or second valve elements from the pipe line without disturbing the remainder of the pipe line as recognized by Griswold et al. (US '439).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Griswold (UK '553) in view of Morgan or Van Nest, as applied to claims 10, 11, 13, 15 and 23 above, further in view of Cornwall (US 213,394 cited by applicant).

The document to Griswold (UK '553), as modified by Morgan or Van Nest, the embodiment of invention recited in claims 11/9/4/etc. discloses all the claimed features with the exception of having "at least a portion of said conduit (connecting the first check valve to the second check valve) is downward sloping".

The patent to Cornwall discloses that it is known in the art to employ a downwardly sloping conduit section A between an upstream check valve B and a downstream check valve B' for the purpose of preventing "the accumulation of solid matter" (page 1, right column, lines 2-3).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in the embodiment of invention recited in claims 11/9/4/etc. of Griswold (UK '553), as modified by Morgan or Van Nest, a downwardly sloping conduit connecting the first check valve to the second check valve for the purpose of preventing the accumulation of solid matter as recognized by Cornwall.

Claims 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the device envisioned by claims 11/9/4/etc. of Griswold (UK '553) in view of Morgan or Van Nest, as applied to claims 10, 11, 13, 15 and 23 above, further in view of Griswold (UK '553) figure 7.

The device envisioned by the embodiment recited in claims 11/9/4/etc. of Griswold (UK '553), as modified by Morgan or Van Nest, discloses "a backflow preventor apparatus for connection to parallel, oppositely-flowing inlet and outlet conduits (the "inlet conduit" feeding the first valve and would be threaded at 26a and an "outlet conduit" leading from the outlet 27a of the second valve), comprising: a first housing (surrounding the first valve) having a first valve (10) and connected to the inlet conduit, said first valve mounted in said first housing so that it is positioned generally parallel to the inlet conduit, said first valve movable between an opened position and a closed position, a second housing (surrounding the second valve) connected to the fluid outlet having a second valve (10) positioned at an angle approximately 90 degrees to the inlet (conduit), said second valve movable between an opened position and a closed position;... wherein the flow of fluid has an average streamline path between the inlet

Art Unit: 3753

conduit and the outlet conduit, wherein the sum of changes in flow direction of said average streamline path is approximately 180 degrees" as recited in claim 16.

Thus the embodiment of claims 11/9/4/etc. of Griswold (UK '553), as modified by Morgan or Van Nest, discloses all the claimed features with the exception of having "a third valve in fluid communication with said first housing that controls the flow of fluid into said first housing".

The embodiment of the invention disclosed in figure 7 of Griswold (UK '553) discloses that it is known in the art to employ upstream (37) and downstream (40) shutoff valves connected upstream and downstream of a double backflow preventor valve 33 and connected to the backflow preventor valve 33 by standard union couplings 38, 39 for the purpose of closing fluid communication upstream and downstream of the backflow preventor valve 33 to permit removal of the backflow preventor valve 33 without disturbing there remainder of the fluid pipe line.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in the embodiment of invention recited in claim 11/9/4/etc. of Griswold (UK '553), as modified by Morgan or Van Nest, an upstream shutoff valve upstream of the first check valve and a downstream shutoff valve downstream of the second check valve for the purpose of closing fluid communication upstream and downstream of the backflow preventor valve to permit removal of the backflow preventor valve without disturbing there remainder of the fluid pipe line as recognized by the embodiment of invention disclosed in figure 7 of Griswold (UK '553).

Regarding claim 17, in the embodiment of the invention as recited in claim 11/9/4/etc. of Griswold (UK '553) "said first valve and said second valve are positioned at 90 degree angle to one another" as recited.

Regarding claim 18, in the embodiment envisioned by the combination above, "said first valve (i.e. the first check valve of claim 11/9/4/etc. would be) positioned at a higher elevation than said third valve" e.g. the "third valve" being the upstream shutoff valve 37 of figure 7 connected at the inlet 26a.

Regarding claim 19, the embodiment envisioned by the combination above, including the standard union couplings of figure 7, includes "a first handle for operating said third valve (shutoff valve 37), said first handle extending horizontally in a direction perpendicular to a line connecting the inlet and outlet conduits" by reason that the union type coupling will permit the direction of the handle of the shutoff valve 37 to extend in any direction desired including one which is "in a direction perpendicular to a line connecting the inlet and outlet conduits" as recited.

Regarding claim 20, the embodiment envisioned by the combination above will include "a fourth valve (40) in fluid communication with said second housing (the second check valve of the embodiment of claim 11/9/4/etc.) that controls the flow of fluid out of said second housing" as recited.

Regarding claim 21 in the embodiment envisioned by the combination above, "said second valve (i.e. the "second valve" of the embodiment of claim 11/9/4/etc. will be) positioned at a higher elevation than said fourth valve" i.e. the downstream shutoff valve 40 as recited

Regarding claim 22, the embodiment envisioned by the combination above, including the standard union couplings of figure 7, includes "a second handle for operating said fourth valve (shutoff valve 40), said second handle extending horizontally in a direction perpendicular to a line connecting the inlet and outlet conduits" by reason that the union type coupling will permit the direction of the handle of the shutoff valve 40

Art Unit: 3753

to extend in any direction desired including one which is "in a direction perpendicular to a line connecting the inlet and outlet conduits" as recited.

Regarding applicants remarks concerning the above as they may apply, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Thus the argument that "there is no suggestion or motivation in Griswold UK '553 to modify the stationary barrel 12 to employ a pivotally mounted disc-shaped clapper" is moot in that Griswold (UK '533) is not relied on to show such features. For arguments sake, had Griswold (UK '533) suggested such a pivotal flapper then the reference would be considered anticipatory. Nonetheless, the reference to either Morgan or Van Nest makes it clear to one of ordinary skill in the art the utility of employing a pivotal check valve in a valve body including an inlet port physically positioned perpendicular or 90° to the outlet port thus accommodating peculiar plumbing requirements.

Applicants remaining arguments rely on the inability of Griswold (UK '533) to be modified in such a manner as to utilize pivotal check valve therein.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

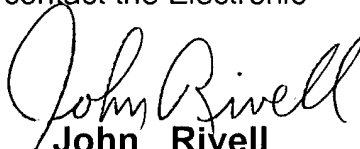
Art Unit: 3753

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Rivell whose telephone number is (703) 308-2599. The examiner can normally be reached on Mon.-Thur. from 6:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on (703) 308-1272. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John Rivell
Primary Examiner
Art Unit 3753

j.r.